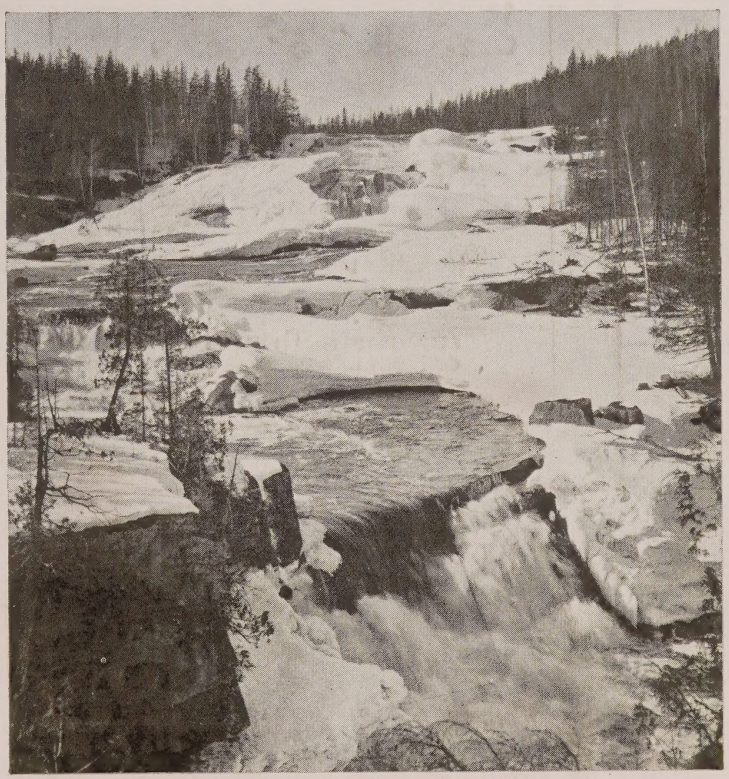
THE BULLETIN

Vol. V. No. 5

Hydro-Electric Power Commission of Ontario

MAY 1919



SILVER FALLS, Kaministiquia River

THE

BULLETIN

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Commission of Ontario

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Editorial

Hydro Quality Lamps Not Enemy Products

EVER so often, a rumor seems to be circulated to the effect that the Commission is buying and selling lamps which are of Enemy origin. It is darkly hinted that "people had better have a care in buying Holland goods, as it is so close to Germany that Holland products are almost the same as enemy goods." The correspondence and photographic copy of the certificate reproduced in this issue of THE BULLETIN is the most conclusive proof imaginable of the absolute falsity of these statements. Nothing could be more absolutely sure than that the Hydro Quality Lamp is NOT OF ENEMY ORIGIN in the slightest particular. The record of the Philips factory is a particularly good one, and, as their letter says, they have been as friendly toward the Allied cause as was possible in a neutral firm.

Merchandising, in Smith's Falls

AN interesting article by H. F. Shearer, manager of the Smith's Falls Hydro-Electric System, in this number of THE BULLETIN is a good record of an enterprising merchandising spirit. Several Hydro managers have recently made enviable merchandising records with the co-operation of the Hydro Sales Department. We should like to be able to publish more of this sort of material from the pens of the different managers. There's nothing quite so helpful as the story told by the doer, rather than its being retailed second-hand. Our columns are always open to all of our manager friends, and we hope to get a great deal more along this line from you all.

Technical Section

The Extension of Big Chute Generating Station

By W. L. Amos
Assistant Engineer, Hydro-Electric Power Commission of Ontario

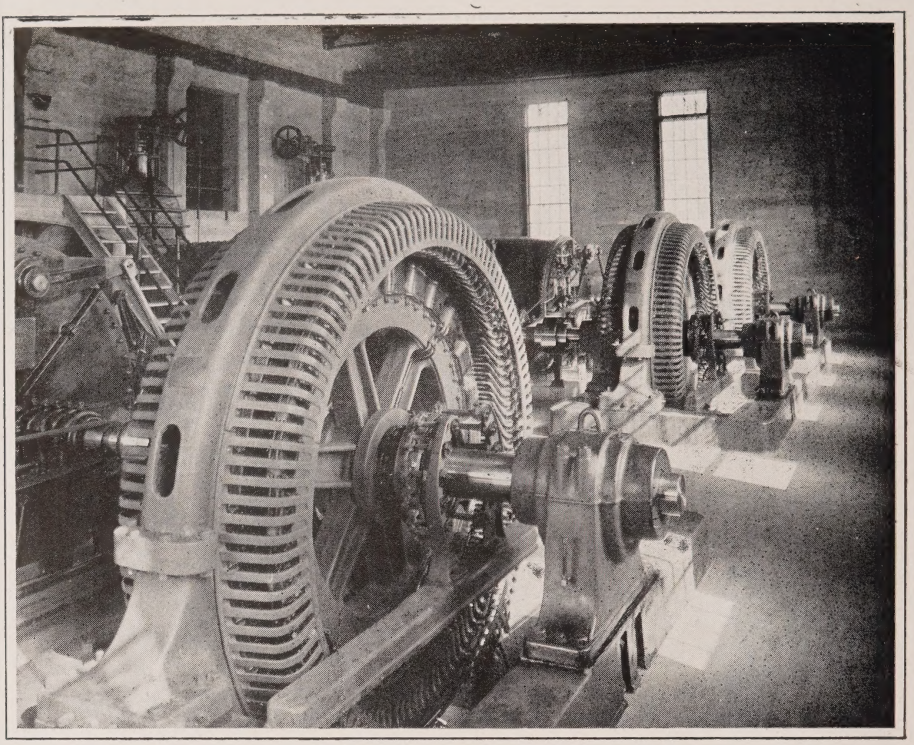
THIS extension completes the power development at this site, therefore it might be in order to give a brief history of this development from its commencement.

In the fall of 1909 the Simcoe Railway and Power Company commenced a development on the Severn River at Big Chute, which is situated about nine miles up from the point where the Severn River empties into Georgian Bay (see map). By May, 1911, three 900-horsepower units were installed ready for operation. The Simcoe Railway and Power Company transmitted power at 22,000 volts to their substation at Midland. From this station it was distributed at 2,300 volts to the Municipality of Midland. This company also proposed to distribute power to any place in the Simcoe County and Muskoka District.

In 1911 the Hydro-Electric Power Commission of Ontario contracted to take power from the Simcoe Railway and Power Company, and in May, 1911, power was delivered to Midland, and in November to Penetang.

In October, 1911, the load on this Big Chute Generating Station was 350-horsepower; in September, 1912, 550-horsepower. In 1913 the number of municipalities supplied by the Commission increased from two to seven; besides Midland and Penetang, there were Collingwood, Barrie, Coldwater, Elmvale and Stayner. The demand in October, 1913, was 1,233-horsepower.

Up to 1914 the Simcoe Railway and Power Company owned the Big Chute Generating Station, the transmission lines to Midland and the Midland station, also a station and distribution system in Victoria Harbor, whereas the Hydro-Electric Power Commission owned the remaining transmission lines and sta-



Interior View of Power House, Showing Units Nos. 1-2-3

tions. In 1914 the Hydro-Electric Power Commission purchased the Simcoe Railway and Power Company, and first operated same on July 1st.

In 1915 Waubaushene and Port McNicoll distributing stations were installed and fed from this system. In 1916 Port McNicoll (Canadian Pacific Railway) and Camp Borden Stations were added. In 1918 Allis-ton, Beeton, Bradford, Cookstown, Thornton and Tottenham were included in the municipalities fed from this system (see Severn System map). In December, 1918, the power demand on this Severn System was 6,350-horsepower, of which 3,700-horsepower was supplied by the Big Chute Station and the remaining 2,700-horsepower was supplied by the Eugenia and Wasdell's Systems.

In 1912 a 22,000-volt transmission line was installed by the Orillia Light and Power Company between Big Chute Generating Station and their Ragged Rapids Generating Station for interchange of power. This tie-line has since been purchased by the Commission and connected to the Swift Rapids Generating Station, which replaced the Ragged Rapids Station. In 1917 the Severn System 22,000-volt transmission lines were connected to the Eugenia System at Collingwood Station. The Wasdell's Falls System has a 22,000-volt line connected to the Orillia Water and

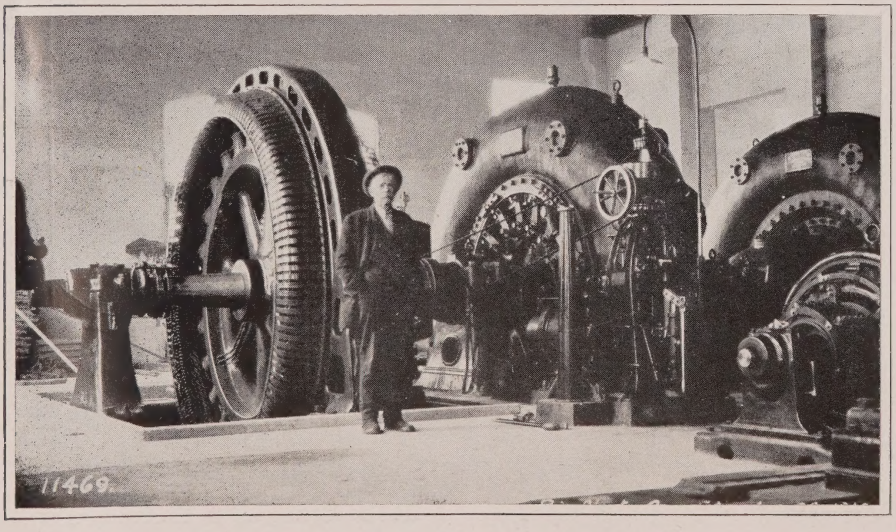
Light Commission's system at Orillia. Thus the Severn System is connected to the Eugenia and Wasdell's Systems and also the Orillia Light and Power Company's system, and allows for an interchange of power, which enables the Commission to meet the increased demand and to provide first-class service with regard to character and continuity.

The original power development as installed under the supervision of the engineering firms of Messrs. C. H. Mitchell and P. H. Mitchell in 1909, 1910 and 1911 was as described in the following. It is also described in detail in the *Electrical News*, February, 1912, page 48, and in the *Canadian Engineer* in June, 1912, page 830.

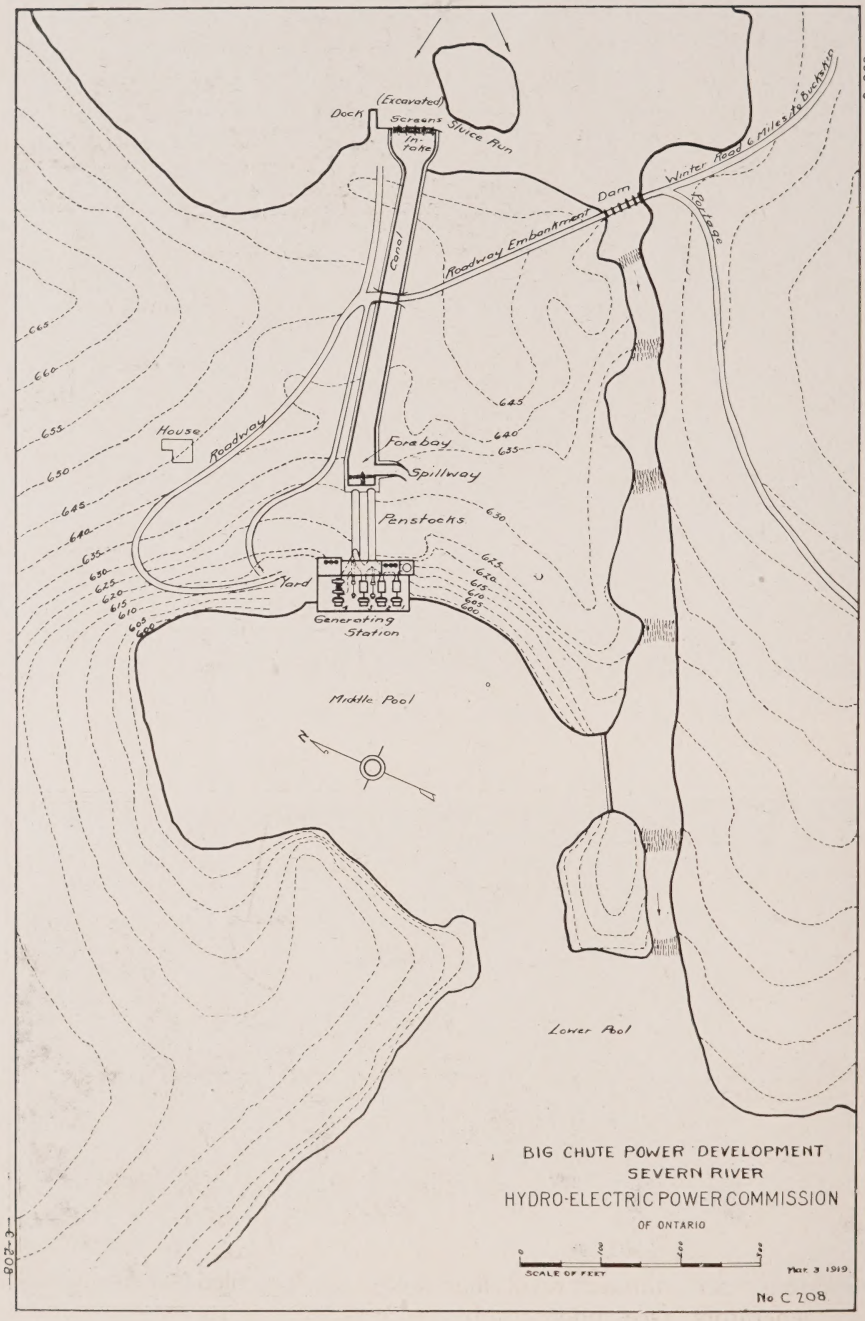
There was the canal entrance, canal about 500 feet long, forebay and one steel penstock nine feet in diameter. The penstock is carried on several concrete piers for about 150 feet down the slope, and turns along the rear of the power house, terminating in a surge tank extending to an elevation four feet above that maintained in the forebay. No. 1 and No. 2 turbines are connected with the penstock by diverging feeders and No. 3 is connected to the Y connection. (See Big Chute Development Plan.)

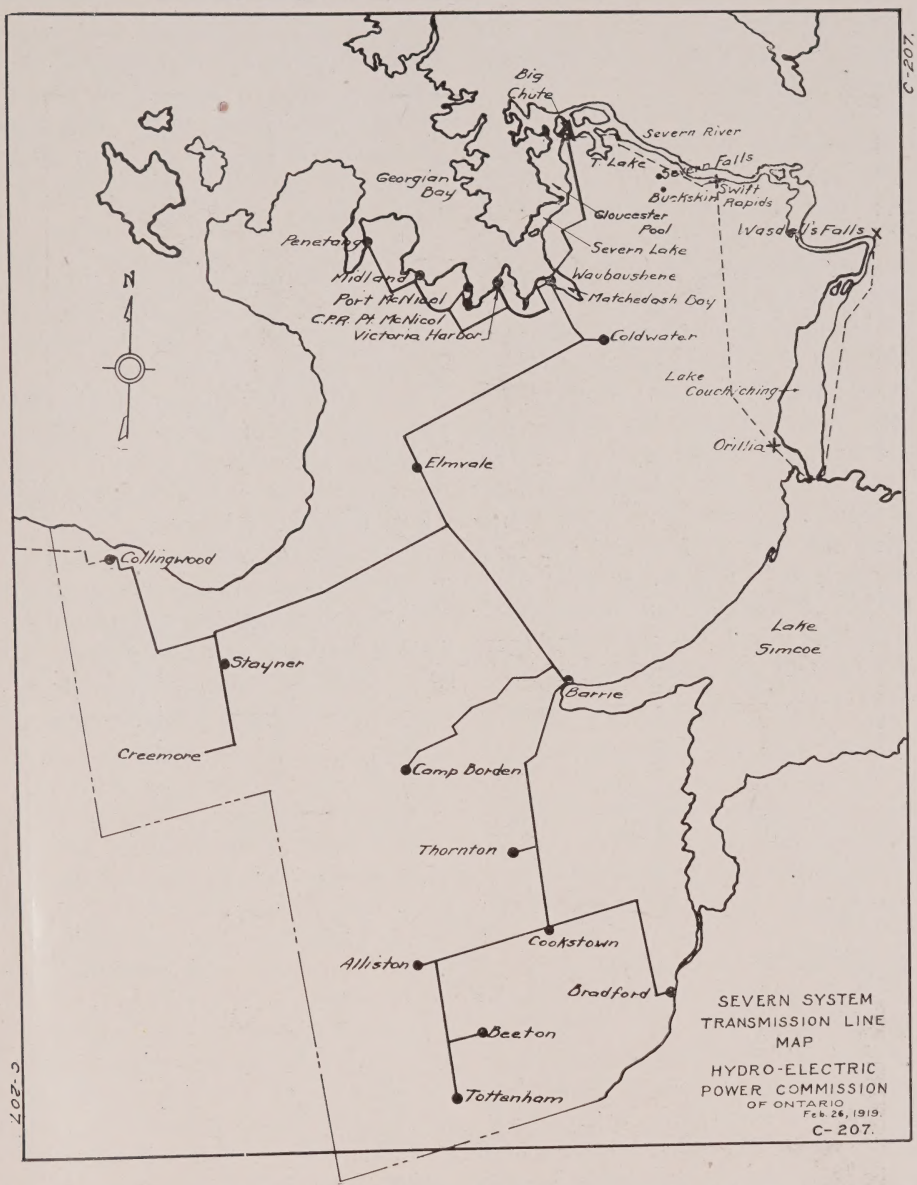
The general works and power station were constructed by Messrs. Pratt & MacDougal, of Midland.

The turbines were built by Wm. Hamilton & Company, of Peterborough, Ontario, and are of the Samson type, and were each designed for 1,300-horsepower capacity at 56 feet head and at 300 revolutions per minute. The exciter turbines have a capacity of 200-horsepower capacity under 56 feet head at 580 revolutions per minute. The hydraulic turbine governors are all of the Lombard oil pressure design.



Interior View of Power House Showing Unit No. 4


C. 208.
Dock
(Excavated)
Screens
Intake
Sluice Run
Canal
Dam
Winter Road 6 Miles to Buckatoo
Tailrace
Roadway Embankment
House
Roadway
Forebay
Spillway
Penstocks
Yard
Generating Station
Middle Pool
Lower Pool
665
660
655
650
645
640
635
630
625
620
615
610
605
600
BIG CHUTE POWER DEVELOPMENT
SEVERN RIVER
HYDRO-ELECTRIC POWER COMMISSION
OF ONTARIO
0
100
200
300
SCALE OF FEET
Mar 3 1919.
No C 208.
C-208-3



Practically all the electrical equipment was manufactured and installed by the Canadian Westinghouse Company. There were three 900-kv-a., 2,200-volt, 60-cycle, 3-phase, 300 revolutions per minute revolving field generators (see photograph) There were two turbine driven exciters, each 100-kw., 125-volt, controlled by a Tirrill regulator. There was one bank of three, 600-kv-a., 2,200 25,000-volt, single-phase, 60-cycle, water-cooled transformers. A second bank of similar transformers

was installed in 1912 in the same pocket as No. 1 bank: the first bank being rearranged.

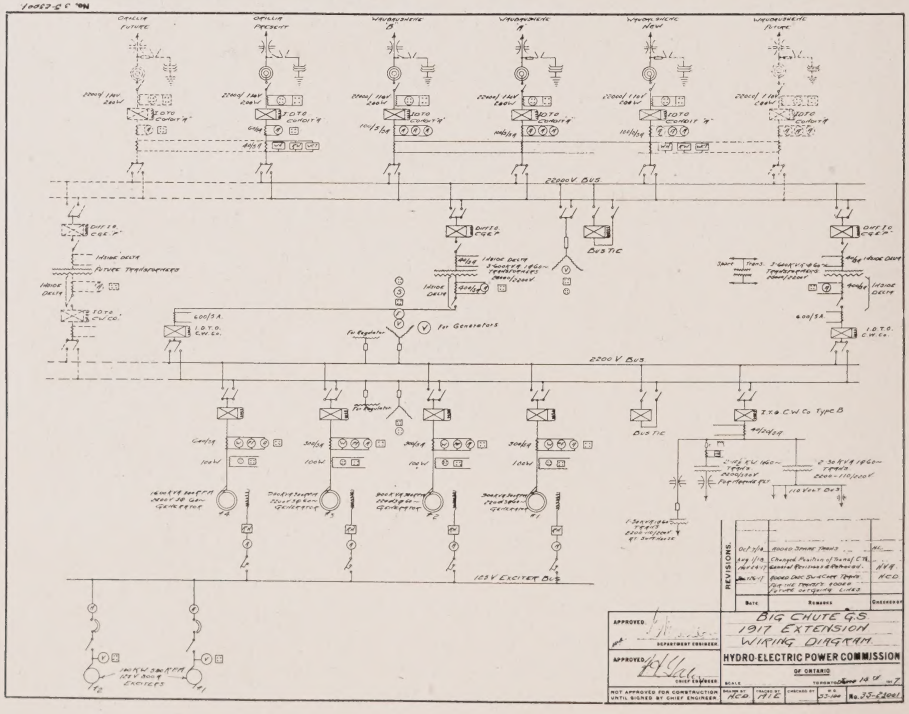
The switchboard consisted of 12 black marine finished marble panels. The switchboard gallery extends six feet into the generator room, while behind it is the 2,200-volt bus and switch structure and generator rheostats, which are operated by shafts in a straight line between rheostat handle and the face plate on the rheostats. For the 22,000-volt transmission lines between the generating station and Midland, see Severn System map. The Matchedash Bay is about 2,000 feet across, and 2 spans were made, 1,153 feet and 858 feet respectively. The longer span also crosses the ship canal and necessitate a 175-feet tower; the centre and east shore towers are each 88 feet high.

When the Commission took over the Simcoe Railway and Power Company in 1914, a number of minor changes were made in the metering equipment in Big Chute Generating Station to make it conform with the Commission's requirements.

In 1917 some 2,200-volt equipment was installed to supply the Department of Railways and Canada with power and light for the marine railway installed at Big Chute.

In view of the rapid increase in the power demands of the Severn System, it became necessary, early in 1917, to proceed with the extension of the Big Chute Generating Station.

To secure the additional capacity, a new penstock and a fourth turbine were required, together with two new valves, head gates and the necessary power house sub-structure and super-



structure. (See plan of Big Chute Development).

The Dominion Bridge Company of Montreal secured the contract for steel penstock, which is nine feet in diameter and about 170 feet long. A contract was placed with the Wellman-Seaver-Morgan Company for a double-runner spiral case turbine of 2,300 brake horsepower under a 56-foot head running at 300 revolutions per minute. The contract for two 66-inch diameter gate-valves, together with two head-gate mechanisms, was awarded to the Boving Hydraulic & Engineering Company, of Lindsay. The extension is 38 by 69 by 30 feet high over the generator room and 40 feet high over the transformer and high tension rooms. The building will be reinforced concrete throughout, whereas in the original station the roof over the generator room consisted of wooden purlins, 1¼ inch matched pine, and covered with several layers of asbestos felt, laid in asphalt cement, supplied and installed by the Johns-Manville Company. That part of the excavation and concrete work carried out in the fall of 1917 was done by Messrs. Wells and Gray, of Toronto. This work was held up during the severe winter season of 1917 and 1918, and in the spring it was proceeded with by the Commission's Construction Department.

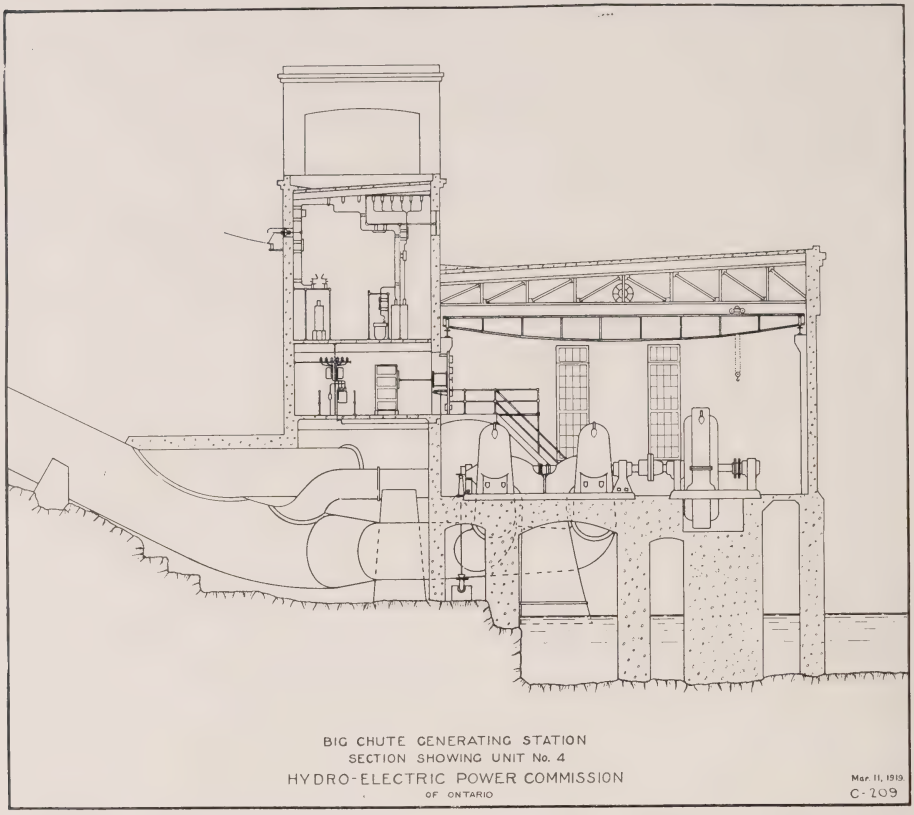
A 1,600-kv-a., 300-revolutions per minute, 2,200-volt, 3-phase, 60-cycle, waterwheel type horizontal generator was purchased from the Canadian General Electric Company, who were also to deliver and erect it. A flywheel effect of 300,000 pounds feet squared was required in the rotor of this generator, and this necessitated a large diameter machine and was the reason for it being set so low in the foundations, as the generator shaft had to line up with the turbine shaft. The specifications for this generator permitted a maximum temperature rise of 40 degrees Centigrade, with a continuous load of 1,600-kv-a., at 80% power factor, normal spped and voltage. This generator was tested in the factory at an overspeed of 185 per cent. normal speed for 15 minutes An insulation test of 10,000 volts between the armature windings and frame was withstood for one minute. The field windings and the field rheostat resistances withstood 1,500 volts for one minute.

A heat run was made on this generator in the factory, also the necessary measurements were taken to calculate the efficiencies, regulation, etc. No tests were required after installation.

This fourth unit, together with the second penstock as mentioned above, were first placed in service and power fed into the system on January 28, 1919.

When making these extensions to the station, it was decided to remodel the high tension switching room by installing duplicate 22,000-volt busses and making all 22,000-volt oil switches electrically operated. It was also decided to install equipment for one new 22,000-volt outgoing line and to remodel the 22,000-volt arresters, and to provide space for equipment for two future lines, one to Orillia and one to Waubaushene. (See diagram of connections.)

The present switchboard is to be rearranged in order to provide space



for the panels to control the new and future 22,000-volt lines. New 2,200-volt electrically operated oil switches will be installed for the low tension sides of the transformers, and the present transformer switches will be used for the new generator and for station service transformers on the low tension side of each bank of transformers. A second set of disconnecting switches will be installed and the oil switch rearranged so that each bank can be connected to either bus, whereas at present each bank can be connected to only one bus. This extension includes a second transformer pocket, and one bank of transformers will be removed from No. 1 pocket to No. 2 pocket and the transformers in No. 1 pocket will be arranged. Space is provided in No. 2 pocket for a possible future bank of transformers, also space for a machine shop and an oil storage tank. A spare 600-kv-a. transformer has been purchased from the Canadian Westinghouse Company, and will be delivered this spring as soon as navigation opens up in the Severn River between Waubaushene and this Big Chute Generating Station. It will be brought up the river in a scow. This spare transformer will be installed in No. 1 pocket with permanent 22,000-volt connections and 2,200-volt connections carried to each transformer in No. 1 and No. 2 banks, so that with short temporary connections it

can be connected in place of any other transformer during an interruption on that bank of only a few minutes.

Practically all the new equipment was purchased from the Canadian Westinghouse Company and was delivered during the summer of 1918. The work of installing this new equipment and remodeling and moving old equipment is now being proceeded with by the Commission's Construction Department, and it is expected that it will be completed early in the coming summer.

An electric hot water heater, together with a water tank and shower bath, are being installed for the use of the station operators and the maintenance men.

In order to provide additional accommodation for the operators a new cottage will be erected shortly.

Generators for Queenston Development

By A. H. Hull

Assistant Engineer, Hydro-Electric Power Commission of Ontario

A CONTRACT was placed by the Commission in February with the Canadian Westinghouse Company, Limited, Hamilton, Ontario, for two 45,000-kv-a. vertical shaft generators.

These will be the largest water wheel units in the world, and will comprise the first installation in the generating station to be constructed at Queenston. Some idea of their size may be obtained from the weights and dimensions below. Each is rated at 45,000-kv-a., 80 per cent. power factor, 12,000 volts, 3-phase, 25 cycles, and will operate at 187.5 revolutions per minute, and is capable of delivering the full output of the turbine, namely, 52,500 horsepower.

The approximate total weight of one generator with its direct connected exciter is slightly over 1,900,000 pounds. At the top of the generator frame, a thrust bearing of Kingsbury type will be placed to carry the entire weight of the generator and turbine rotating parts. This bearing is guaranteed to operate under a total load of 900,000 pounds. The exciter will be direct connected to the generator shaft and will be mounted above the thrust bearing. The overall diameter of the generator is approximately 25 feet, and the height above base ring is approximately 25 feet 7 inches to the top of the exciter.

In large generators, the colling of the winding and laminations is a very important feature. Each of these generators will require about 115,000 cubic feet of air per minute for cooling purposes. This air absorbs heat in passing through the generator ducts, and must be discharged outside the building, in order to keep the generator room at a reasonable temperature.

As the generator becomes heated, it is very important to keep the temperatures of the windings and laminations within the safe limiting tem-

perature of the insulation. The Commission's specifications, therefore, required that several temperature detectors be placed at various places in the slots in which the coils are placed, and that these be connected to a measuring instrument, so that the temperature at such places may be ascertained at any time. The generator is guaranteed to operate at rated load with an observable temperature (by thermocouple measurement) not exceeding 105 deg. Centigrade, with air temperature of 40 deg. Centigrade.

The armature windings will be subjected to a one-minute insulation test, after the machine is asembled, of 30,000 volts to ground and between phases. The generator is guaranteed to stand a short circuit without injury, and will be designed to safely withstand a runaway speed of 347 revolutions per minute.

Owing to the large dimensions of these generators, they will have to be assembled in the generating station. It is expected that both the generators now on order will be in operation early in 1921.

The specifications for the above generators were prepared by the engineers of the Commission's Electrical and Building Engineering Department.

With the Editor

With Apologies to K.C.B.

ONCE UPON a time a
YOUNG FELLOW thought it
WOULD BE AN easy matter
TO EDIT A house organ.
AFTER EDITING said
HOUSE ORGAN for a
PERIOD OF several months
THIS YOUNG fellow
BECAME IMBUED with the
IDEA THAT he was working.
FROM HIS experience
HE KNOWS what it is
TO BE violently
CONDEMNED BY some whose
CONTRIBUTIONS HE failed
TO USE and by others
BECAUSE HE wrote
UNCOMPLIMENTARY STUFF
ABOUT THEM.
HE KNOWS what it is
TO HAVE to plead and
BEG AND threaten
IN ORDER to get the
BOOK OUT and he
ALSO KNOWS how it
FEELS TO be asked
FORTY THOUSAND times
A DAY "When will
THE BOOK come out?"
HE IS generally
ASKED THIS question by
PEOPLE WHO have never
CONTRIBUTED ONE thing
FOR THE book, which fact
CAUSES HIM to reply
IN A sweet, courteous manner.
HOWEVER, THIS fills
ONE PAGE easily and
WE THANK YOU.

—*The Starter*

Clause B Rules and Regulations

THE attention of local commissions, superintendents and managers is hereby directed to Clause b, page 50, Fifth Edition of Rules and Regulations. In many places this regulation is being openly and entirely disregarded, and the district inspectors are being notified accordingly and instructed that the rule must be enforced. They have recently come across main services dangerously over-fused and filled with objectionable fuse wire and the box unsealed. In cases of this kind, so far, it has been difficult to fix the responsibility. The district inspectors are, therefore, instructed to notify all interested parties that the proper sealing of service boxes is to be effected at once, and that the supply authorities will be held strictly responsible for the proper fusing of the main cutout. Enforcement of this regulation should promote proper branch fusing, under which conditions the main fuse should rarely, if ever, blow.

The Inspection Department, therefore, asks for the co-operation of the Hydro districts, and is open at all times to consider any special cases where a modification of this rule might be permitted, although such cases must be a rare exception.

Amongst several police court cases which have been tried during the past few weeks, mostly against wiring contractors, was a case against an official of one of the local Hydro towns for violation of the Commission's regulations. Cases of this kind are very much to be regretted, and it was with the greatest reluctance that the Inspection Department felt constrained to take action. It is pointed out, however, that favoritism and discrimination would be quickly charged if Hydro municipalities were permitted to openly violate the Commission's Regulations and prosecutions were at the same time registered against private contractors or privately-owned corporations.

The Rules and Regulations of the Hydro-Electric Power Commission are, in effect, the laws of the Province of Ontario, administered by the Hydro-Electric Power Commission, and it behoves all Hydro municipalities to scrupulously avoid violations of these Regulations, as it is manifestly unfair to take advantage of the Inspection Department or expect them to condone offences of the kind. The Inspection Department welcomes co-operation, and is only too glad to extend it to anyone, but they justly feel that the taking of French leave or the open violation of regulations is an unfair advantage and simply cannot be permitted.

There is another feature of this question, and that is—the matter of responsibility. There have been sufficient accidents (and disastrous

ones) recently, the responsibility for which has not yet been fixed—in fact, criminal action has been threatened in one case, and it is often difficult to foretell what serious results might be precipitated by a trivial omission. The Inspection Department is quite prepared to admit that at times the enforcement of some small detail may appear insignificant or of no consequence. If it can be eventually proven that this same small omission was the cause of a serious fatality, or even property loss, it would place someone in a decidedly uncomfortable predicament.

The Rules and Regulations of the Commission have been adopted after careful consideration and after having received the opinions of all parties interested, and if representative bodies have any objection to a certain rule, it should be brought before the Commission in the regular way, with the object of modifying or amending it, but to openly violate it is another matter.

In the case of the prosecution of the local Hydro official mentioned above, the Inspection Department (while very much regretting the necessity of such action) takes this opportunity of pointing out that such action must not be construed as personal or directed against any person or persons, but, inasmuch as the same party had been brought to court on previous occasions for the same offence, again warned in writing of further offence of the same nature, and again apprehended in a third case, and as a private wireman had been fined in the same town a few weeks previous for identically the same violation, it is quite obvious that there was nothing else to do but enforce the law in accordance with the warnings issued.

St. Catharines Staff Bulletin

The following staff bulletin was submitted by P. B. Yates, Manager of the Public Utilities Commission, St. Catharines.

Mr. Yates says: "This bulletin was adapted from a letter given in the February 15th number of the *Electrical Review*."

St. Catharines, Ont.,
Feb. 19th, 1919.

Memorandum to the Staff:

As a result of the Commission's experience extending over a period of five years in meeting various problems involving our relations with the public, we have become very strongly impressed with the large influence which the quality of service rendered and the methods of handling exerts upon the character of our relationship with the public.

Through the handling of complaints most utilities find their only opportunity of meeting their consumers. This is unfortunate, because the utility gains its impression of its consumers through these complaints, which are often presented at times when the consumer is aggravated, and, on the

other hand, the consumer gains his impression of the utility through the methods by which the complaint is handled.

With the utility, the handling of complaints is a routine transaction which occurs with regularity, and the employees engaged upon this phase of the work come to regard the complaints merely as a part of the routine which is capable of being handled by routine methods, in much the same manner that material is passed through the stock room. With the consumer, however, a complaint is not a routine matter, but represents to him a real grievance. In other words, utilities are apt to regard a complaint as lacking individuality, while, from the consumer's standpoint, each complaint has a very distinct individuality and stands out in his mind as a particular situation which merits individual attention.

We have been frequently impressed with the fact that, if a utility is willing to accord to each complaint an individuality and give it a just investigation, both from the consumer's and the utility's viewpoint, the complainant is well satisfied, and, as a result of his contact with the company, has an appreciation of its human characteristics and a regard for its sincerity of purpose.

The problem as to the future of public utilities, and especially of municipal utilities, is one which occupies considerable attention in the public mind to-day, and is one which is of vital importance to a municipal utility and to the public. We believe that some of the criticism directed against municipal ownership, and which to a certain extent reacts against the Hydro-Electric Power Commission of Ontario, which, in the public mind, is charged with the supervision of our acts, might be relieved by a broad-minded policy of handling complaints in which each case is treated as an opportunity for acquaintanceship with the consumer and each complaint is given an individuality and impartiality investigated.

Yours very truly,

P. B. YATES,

PBY:D. Manager.

Fair Puffed Up

An Irishman suffered from a stomach ailment. The doctor was called in, and, on his second visit, questioned his patient.

"Have you been drinking hot water an hour before each meal, as I directed. If so, how do you feel now?"

"Doc." said Pat, "I tried hard to do it, but I had to quit. I drank for thirty-five minutes, and I feel like a balloon."—*Selling Facts.*

So Quick

A lady who had just received an interesting bit of news said to her little daughter:

"Marjorie, dear, auntie has a new baby, and now mamma is the baby's aunt, papa is the baby's uncle, and you are her little cousin."

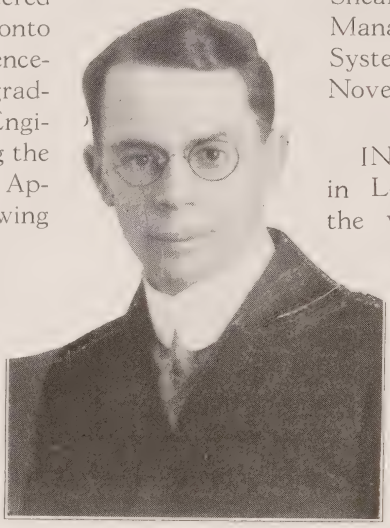
"Well," said Marjorie, wonderingly, "Wasn't that arranged quick!"

—*Selling Facts.*

WHO'S WHO *in* HYDRO?

HARRY F. SHEARER was born in the Township of Charlotteville, county of Norfolk, Ontario, in May, 1885.

He received his education at Simcoe High School, and later entered the University of Toronto School of Applied Science-from which he was graduated in Electrical Engineering in 1908, taking the degree of Bachelor of Applied Science the following year.



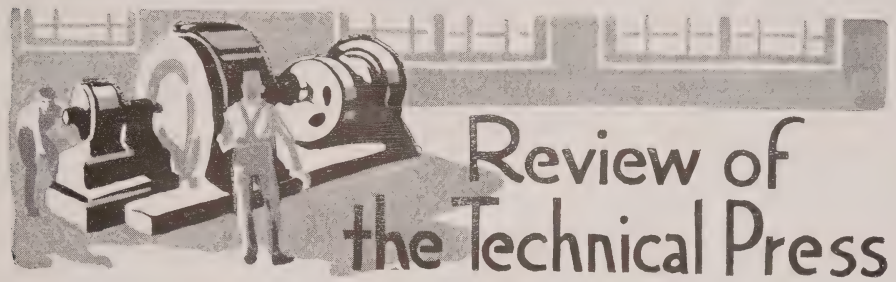
On leaving college he entered the employ of the Western Electric Company, Chicago, Illinois, as Assistant Telephone Apparatus Engineer, later going to the Allis Chalmers Company, Cincinnati, Ohio, as Power Apparatus Testing Engineer. After two years he returned to Toronto and joined the Staff of Messrs. Smith, Kerry & Chace, under Mr. A. L. Mudge and Mr. L. G. Ireland, of the Midland Construction Company, in electric station design and construction work

In 1912, Mr. Shearer entered the employ of the Moloney Electric Company, as Western Sales Representative under Mr. R. E. T. Pringle, and later became associated with the New Business Department of the Toronto Hydro-Electric System as Power Engineer.

When Smith's Falls became a "Hydro" municipality, Mr. Shearer was appointed Manager Hydro - Electric System, which was on November 1, 1917.

IN AN INTERVIEW in London a few days ago the well - known wireless wizard, Marconi, is reported as saying that he looked forward to scientific developments continuing to rleieve the burden of work so that we may in the future be able to accomplish a day's work in three hours and therefore have much more time available for culture and recreation.

Science and invention have done more to make this possible than agitation. Electricity is doing its share to relieve drudgery. In some places 6 hours is proposed as the working day. But a sudden drop to 6 hours cannot be advocated by thoughtful persons as a sensible measure just now.



Why We Do Compete

By F. Heyman,

Business Manager of Alliance Gas and Power Company, Takes Exception to Some of C. E. Miller's Conclusions

THE article entitled "Why We Do Not Compete," in November *Contact*, was interesting— interesting mainly because our view of the subject is at variance with that expressed in almost every point.

The object of the merchandising departments of the Doherty properties, of which the Alliance Gas & Power Company is one, is to popularize the use of electricity, but to do so in a business-like way by the employment of sound merchandising principles. Our department is self-sustaining, prices are maintained, and we do not have "cut-price" sales. In other words, we conduct a retail business on strict business principles, and we believe the community is served "electrically" far better than if we were not in the business.

Popularizing Electricity

Why? We can sell more electrical appliances and give better service. To fully develop the washing machine and other large appliance fields, the deferred payment plan must be employed. The ordinary prospect cannot pay out $75.00 or $150.00 cash for a household device. If that is required, most people will do without it. But if the purchase is made easy, the average householder can afford these modern electrical conveniences. The ordinary contractor has not the capital to permit deferred payment selling. The Central Station can do business that way, and by employing such a method can spread the gospel of electricity farther and wider than the contractor can without it.

We advertise liberally, we pay a great deal of attention to show windows and sales room, we employ solicitors and conduct campaigns. However, as stated before, we do not believe in a "cut-price" or "prize-package" sale, and these methods are not employed. Each month we feature some appliance. We do this by advertising it in the newspapers; by a special window display; by the use of literature furnished by the manufacturer; by having the sales clerks mention the appliance to everyone who enters the store; by having the

solicitors give special attention to it; and sometimes by a mail campaign. In this way we can double our sales of an appliance.

By these methods the use of electricity in the home is popularized, and the contractor and dealer receive a distinct benefit. They cash in on our advertising, for it also appeals to those of their customers who have gotten the habit of buying things electrical from them. It increases the total sales of appliances in the town, and each contractor naturally gets a share of the new business.

The Central Station is usually in a position to give better break-down service than the contractor. Our "trouble" men are specially trained to locate and correct faults in the appliances we sell. They spend time in the factories of various manufacturers whose goods we handle, studying construction and operation, so that they may be fully prepared to find and remedy the trouble in our customers' appliances.

Our relations with the contractor are quite amiable. We turn over wiring and repair jobs to him, and we do not take an unfair price advantage. In the matter of wiring, we do not think that is the Central Station's job and we do not have a wiring department. All this work is turned over to the contractor.

Live Dealers

An incident occurred recently which indicates the success of our merchandizing plan and which shows the attitude of the wide-awake contractor-dealer. A large, successful contractor of Cleveland came to us for information regarding Alliance. During our talk he said he wanted to establish a branch and was anxious to get in a Doherty town. This surely indicates that he realizes the value of our methods in developing the electrical market.

In the article previously mentioned, it was maintained that by entering the merchandising field, the Central Station was taking advantage of its position as the author of things electrical in the community. We agree. The Central Station is taking advantage of its position, but it is not an unfair advantage if it is following a business-like course. It seems to me that if the Central Station does not utilize its position in this way, it will not be advancing the electrical industry as it should. The Central Station has a responsibility to the industry that cannot be shared by any other branch of it. It generates and distributes the energy which is the foundation of the business, and if it can legitimately increase the use of electrical energy, it should do so.

There may come a time when the contractor-dealer can fully and competently handle the sale of electrical devices. Although this may now be the case in individual instances, broadly speaking it is not so. Until that time the Central Station has its place in the merchandising field.—*Contact.*

The File Girl

Behold the little file girl, so sweet and so debonair,
With nothing on her little mind except her fluffy hair,
Her disposition's Splendid, see how she smiles at me,
The while she puts file ten-O-four in folder ten-O-three.—*Better Service.*

Association of Municipal Electrical Engineers

Minutes of Meeting of Executive Committee

THE meeting was called to order at 12.15 o'clock p.m. in Room 312, Hydro-Electric Power Commission of Ontario, Administration Building, Toronto, on April 2, 1919.

Those present were: Messrs. O. H. Scott, president; M. J. McHenry, vice-president; P. B. Yates, W. E. Reesor, H. F. Shearer, E. J. Stapleton and R. H. Martindale, district vice-presidents; S. R. A. Clement, secretary; R. C. McCollum, treasurer; H. H. Couzens, V. S. McIntyre and A. T. Hicks, chairmen of standing committees, being members of the Executive Committee; and L. G. Ireland, Geo. C. Rough, R. T. Jeffery and T. C. James, members of standing Committees.

It was moved by Mr. Stapleton that the minutes of the previous meeting of the Executive Committee be passed without being read.

This meeting of the Executive Committee had been called for the purpose of considering plans for a convention of the Association to be held at Niagara Falls, Ontario, some time during June.

Mr. Martindale reported that the Committee, consisting of himself as Chairman, J. W. Cook, New Toronto; T. E. Bell, Mimico; Jno. J. Heag, Guelph; and C. W. Alford, London, that had been named by the past president, as required by a resolution of the January convention, for the purpose of reporting on the question of bare versus weatherproof covered wire, had prepared a suggestion regarding obtaining an opinion on this subject. The suggestion was that the Association send out letters to the various superintendents requesting them to answer certain questions stated on an enclosed form, being as follows:

Name.....
Address.....
Occupation.....
No. of years' experience.....
At present employed by.....

1. Considered from the standpoint of safety to life, is weatherproof line wire safer than bare wire for general distribution on voltages over 750?

2. If so, at what voltage is a covering of no value?

3. Is weatherproof wire any advantage from an operating standpoint, as regards crosses, grounds, or freedom from foreign wire troubles?

4. Are you in favor of it being abolished entirely for line work for voltages over 750?

Remarks (if any).

Moved by Mr. Couzens, and seconded by Mr. Yates:

That the Secretary be instructed to write letters enclosing forms as suggested by Mr. Martindale, and upon receipt of replies, forward the same to Mr. Martindale to report on the same at the next regular meeting. Carried.

The Secretary reported as to the paid-up membership for the year 1919. It was suggested that he send out statements to all municipalities who had not yet sent in dues, giving the amounts of the dues that would entitle them to membership. The Secretary advised that he would act according to this suggestion.

He also reported that he had received a letter from the Secretary of the Hydro-Electric Power Commission of Ontario, in reference to changing the name of the Electrical Inspection Department, as follows:

Toronto, February 5th, 1919.

Mr. S. R. A. Clement,
Secretary, Association of Electrical Engineers of Ontario.
190 University Ave.,
Toronto.

Re Inspection Department.

Dear Sir,—

Yours of February 3rd came duly to hand. The question of changing the name of the Electrical Inspection Department or eliminating the word "Hydro" from it has been before the Board on several occasions, and the conclusion reached was that, inasmuch as the Commission were called upon to take the responsibility of the administration of the department, the preparation of all rules and regulations regarding it, and as their authority for so doing is covered by the Power Commission Act, it would not be advisable or practical to make any change in the letter headings or stationery. Yours truly,

(Signed) W. W. Pope,
Secretary.

The Treasurer advised that the Association had a balance of cash on hand of $644.37.

Mr. Couzens, Chairman of the Papers Committee, reported as follows for suggested programme for the coming convention:

"Your Committee beg to report that they have met and considered the recommendation to be made to the Executive regarding the papers for the next Convention. In view of previous experience, it is recommended that one paper only be considered in the morning and afternoon of each day.

"The following programme is submitted for consideration:

Dates of meeting—June 19, 20 and 21, 1919.

"*Thursday.*

"*Morning*—Registration and possibly some amusement.

"*Afternoon* — Mr. McCollum — Accounting.

"*Evening*—Dinner—Mr. Chase to speak.

"*Friday.*

"*Morning*—Papers—Mr. Goodwin and Mr. Chase.

"*Afternoon*—Overhead Work (Lines, Transformers, Arresters, Insulators, etc.)—Mr. C. E. Schwenger.

"*Saturday.*

"Chippewa Development."

Moved by Mr. Couzens and seconded by Mr. Yates:

That the report of the Papers Committee be adopted. Carried.

Mr. McIntyre, Chairman of the Conventions Committee, reported as to progress made in preparing for the Convention. He advised that that Committee would meet on that evening and that he would send the Secretary a report of what was done.

Moved by Mr. McIntyre and seconded by Mr. Yates:

That the Membership and Credentials Committee obtain badges for the delegates and see that none but members get them; also that it bring in recommendations in reference to registration. Carried.

Moved by Mr. Hicks and seconded by Mr. Stapleton:

That the President appoint a committee to bring in a report in reference to amendments of the constitution and by-laws. Carried.

The meeting adjourned at 3.25 o'clock p.m.

Report of Meeting of Membership and Credentials Committee, Held on Afternoon of April 2nd, 1919

The district vice-presidents, with the president and secretary, met as the membership and credentials committee, immediately after the adjournment of the Executive Committee meeting held on that day.

Mr. P. B. Yates was elected chairman.

The Secretary was instructed to obtain membership cards for each class of member. A Class A card is to be forwarded to each paid-up utility, with a request that the secretary be advised of the names of persons for whom class B cards are desired. Class B cards will then be forwarded according to the instructions received.

The membership cards will contain the names of the persons to whom issued, and will serve as identification cards at the time of registration at conventions. Convention badges will be issued only to holders of membership cards. Instructions as to the use of membership cards are to be printed on them.

The Secretary was also instructed to look after obtaining convention badges, which will consist of small buttons, of colors corresponding with those of the membership cards, each with a paper tag attached, on which the name of the delegate will be written.

The Origin of "Hydro Quality Lamps"

Positive Proof that Hydro Lamps are not in any way Enemy Products

THE Canadian Laco-Philips Company, Limited, from whom we have been buying the HYDRO lamp since 1911, have given us a copy of a letter they have received from their factory, Philips' Glowlampworks, Limited, of Eindhoven, Holland, in regard to their activities during the War.

To help relieve the shortage of lamps in England, the Philips' factory not only furnished the English lamp factories with lamp bulbs manufactured at their glass works in Eindhoven, but also report sales of completed lamps to England, France, and Italy:

England: 1914, $14,920; 1915, $574,685; 1916, $1,758,521; 1917, $1,410,173; 1918, $2,449,571.

France: 1914, $246,149; 1915, $735,681; 1916, $1,457,840; 1917, 2,378,496; 1918, $1,391,472.

Italy: 1914, $711,845; 1915, $756,468; 1916, $1,392,602; 1917, $1,985,973; 1918, $2,029,212.

They not only contributed to the relief work of our Allies, but were among the first to give aid to the Belgian refugees who came into Holland at the beginning of the War. They also sent, at request of friends in England, Australia, and Italy, at regular intervals, packages of food and supplies to persons in the German prison camps.

They consistently, during the War, purchased all the materials needed in the manufacture of the lamps and the operation of the factory in the Allied countries or the United States.

Every shipment of lamps they have made has been accompanied by a sworn declaration and affidavit before the British Consul that no goods of enemy origin enter into the manufacture of the lamps and that no person of enemy origin has any interest in the lamps.

Eindhoven, where the Hydro lamp is made, is a town of some ten thousand people in the north of Holland, and practically fifty per cent. of the people of the town are working at the factory.

The factory, now employing about 4,000 people, was started in 1891, and has been built up and controlled ever since by two brothers, Anton and Gerard Philips, both of entirely

London Transhipment 33123

DUPLICATE

Forwarding agents: Phs. van Ommeren Rotterdam.

In case of Reference please quote Ref. No. 4.4.981

CERTIFICATE OF ORIGIN AND INTEREST

I G. T. MACLEAN, BRITISH VICE-CONSUL, hereby certify that Messrs PHILIPS' GLOWLAMPWORKS Ltd *Manufacturers*, residing at EINDHOVEN (Holland), have declared before me that the merchandise designated below, which is to be shipped from this town to TORONTO. consigned to Messrs. Canadian Lacp Philips Co. Ltd. TORONTO. *(Merchant)* in Canada. has not been produced or manufactured in enemy territory, that no person who is an enemy, or is treated as an enemy under any law or proclamation for the time being in force relating to trading with the enemy or relating to trading with persons of enemy nationality or association has any interest in such merchandise, and that they have produced to my satisfaction invoices or other trustworthy documents in proof thereof.

"The present certificate must not be regarded as an absolute guarantee of the origin of the goods which remain liable to seizure if they should prove on examination by the competent British Authorities to be of enemy origin.

WITH TRANSHIPMENT IN LONDON.

Number and Description of cases	Marks	Numbers	Weight or Quantity	Total Value	Contents	Name of Producer or Manufacturer
192 cases	C.L.P.Co HYDRO TORONTO Made in Holland	70354/406.	Nett weight 2495 Ko.- Gross weight 8700 Ko.-	£.2068.7.6.	26816 Electric Glowlamps (METALLIC FILAMENT)	PHILIPS Glowlampworks L'd EINDHOVEN (HOLLAND)
4119 & 4121	SYBTEM TORONTO B-59929 Made in Holland					

DUPLICATE

NIL percent of the cost of these goods to the manufacturer is due to material and labour of enemy origin.

The goods covered by this certificate must be shipped within a period of not more than one month. from the date hereof.

This certificate is valid for not more than one hundred and ninety-two cases..

(Signature of person declaring)

PHILIPS Glowlampworks Limited per pro

13 DEC 19

BRITISH CONSULATE GENERAL ROTTERDAM

(Signature of Consular Authority issuing Certificate, and date).

British Vice-Consul. ROTTERDAM.

Dutch descent. They give their personal attention to the various problems that constantly come up in the manufacture of lamps, and thus are able to produce the uniform quality of the HYDRO lamp.

(Copy.)

VE.-/WIT Eindhoven (Holland),
January 27th, 1919.
Sales Dept. 1071.

Messrs. Canadian Laco Philips Company, Toronto.

Gentlemen:

We beg to acknowledge receipt of your letter dated November 18th, number 7051, the contents of which had our best attention. In the meantime we received also your telegram:

"Number four thirty one. Telegraph date answer mailed."

"Our letter seventy fifty one."

In reply to which we cabled you as follows:

"8125 Your numbers four two six four thirty one shall mail answers few days."

As to the claims that our lamps should be of German origin, which, in your opinion, will certainly be made, the best way to offset same is by emphasizing that all goods which are leaving Holland for the Allied countries, including, of course, Canada, must be accompanied by a certificate legalized by H.M. British Consul at Rotterdam, stating that the goods in question do not contain any percentages of enemy materials.

As to the volume of our business with England, France and Italy during the years 1915, 1916, 1917, 1918, we beg to give you below these figures, which are very interesting in comparison with our shipments of the year 1914, being the first of the war:

The increases are very considerable, which, in our opinion, is the best proof that lamp makers in the said countries are not in a position to satisfy the requirements. The largest part of the lamps we supplied to England were for use in ammunition shops, whereas the balance has been used for public lighting.

The lamps for France also were for use in ammunition shops, military service and auxiliary factories working day and night for the national defence. What should they have done if we had not supplied our lamps? For your information we give you below the most important firms in France to which we have been regularly sending our lamps in large quantities: Schneider, Le Creusot; Automobiles Renault, Blancourt; Aeronautique Militaire, Meudon; Aviation Militaire, St. Cyr; Chef Bataillon Tongeroux, Dijon; 17e Corps d'Artillerie, Toulouse; Ecole Pyrotechnique, Bourges; Arsenal, Toulouse; Aviation Militaire, Amberieux; Hospital Auxiliare, Paris.

Most lamps for Italy were for military purposes — *e.g.*, we supplied many lamps to the well-known firm of Gio Ansaldo & Co.,di Cormigliano-Ligure.

Apart from our important supplies, we did much useful work in the aid of the Allied cause. When, at the beginning of February, 1917, the unmerciful submarine war was announced, we immediately bought three small steamers of about 250 tons each, which have been regularly plying between Rotterdam and London, thus breaking the blockade, and entertaining, so to say, a regular service between Holland and England

in the interest of the Allies, as practically all the lamps shipped on the said steamers were for use in England and the Dominions. From time to time one of the steamers sailed for France, charged partly with lamps to replenish the stock of our Paris branch office, which sold the larger part of them to the above-mentioned institutions, and partly with foodstuffs, such as cheese, condensed milk, vegetables, etc., together with lamps for Italy. These voyages were very dangerous, as steamers always ran the risk to be ill fated. On various occasions they have been attacked, either by submarines or flyers, but, fortunately, they invariably escaped safely. On one of his voyages to London, the captain of one of the steamers discovered at a small distance a big submarine, which certainly would have destroyed our steamer had not suddenly a fogbank made her invisible, so that the steamer could safely arrive in London.

With reference to financial assistance, we gave large sums to various committees of the Allies. Furthermore, when Belgium was violated in 1914 and refugees came to Holland, our firm was the first to give these poor people all possible accommodation. We engaged a number of them in our factory, so as to enable them to take care of their family. Also about 300 interned Belgian soldiers have been in our service during the continuance of the war, for who we built special barracks, but, in the meantime, owing to the armistice, all those interned were repatriated. Some of the Belgians who during the war were in our office are now in the service of our branch house at Brussels, just opened. Also on the French refugees, who were compelled by the Germans to leave the North of France, we bestowed our utmost care, and these people greatly appreciated the assistance we gave them.

Finally, we would say that, at the request of our friends in England, Australia and Italy, we have been sending regularly, first, weekly parcels, and, later, on account of regulations of our Government, owing to scarcity of foodstuffs in this country, monthly parcels to prisoners of war, containing victuals and other articles, which came in very useful to them, and mitigated to a great extent the hard times they experienced in the camp.

No doubt all the above facts will greatly interest you, and we hope that, when putting same before the public, they will be convinced that we did as much as the neutrality of our country permitted.

We are, Gentlemen,

Yours faithfully,

Per pr. PHILIPS GLOWLAMP-WORKS LIMITED.

The Philips Glowlampworks, Ltd., supplied large quantities of lamps during the war to the British Thompson-Houston Company, the General Electric Company, and Siemens, the largest companies in England.

No Disturbances

An old lady with an ear trumpet went to the Scotch kirk one Sunday. The usher, who had never seen an ear trumpet before, kept watch, and finally said, in a hoarse whisper, "One toot and oot ye go."—*Selling Facts.*

Selling Electric Fans

THE electric fan is an article which can be used the year around for many services other than the services for which it was originally developed, and the public is gradually learning more and more to use the fan at all seasons. As an aid to uniform heat distribution in winter it is almost as valuable as it is to prevent discomfort from the heat in summer. It can be used for drying clothes, photographic plates, vegetables, etc.; for driving steam and odors from the kitchen, refrigerator, closets, etc.; for keeping the frost from show windows, and dozens of other services which make it an article of year-around utility.

From a sales angle, however, the fan is still a seasonable proposition, and can be sold to the best advantage during the one or two hot months of the year only. After the purchaser has obtained his fan, he will use it for many of the extra services for which it is suitable, but in ninety-nine cases out of a hundred the appeal which makes the sale and the only one which will do so is the hot weather comfort appeal, and, curiously enough, this appeal is effective only right at the time when the prospect is actually experiencing the discomfort of hot weather.

The heat of one day is forgotten the next, provided a cool breeze has sprung up to dissipate the heat, and when one hot day or week has ended in a cool wave, apparently no one ever expects to experience another. So sensitive are fan sales to weather conditions, in fact, that, other things being equal, the sales of fans from day to day will fluctuate in exact ration to the fluctuations of temperature. For this reason, it is obvious that the salesman who works while the sun shines is the one who will put his fan business over big.

When the warm weather is present, every possible means of placing the message of fan comfort before the public should be utilized to the limit. The sales helps furnished by the fan manufacturer should be employed so that every possible user of a fan will get the message in some form. Newspaper advertisements, movie slides, window displays, mailing folders, all available advertising helps should be held in readiness, so that they can be put to work on the first real hot day.

These advertising helps should, of course, be supplemented by personal and telephone calls, where the prospects are best for sales. Lists of such prospects should be made up in advance of the fan weather, so they will be ready for use when the hot weather breaks.

Lists should be made up of homes where there are small babies and invalids. These can be compiled from news items in the press and from

birth records. Such prospects could be covered by telephone calls. A tactful reference to the value of a fan as an aid to convalescence or as a comfort to the little one, with an enquiry as to whether the prospect would like to have one sent for trial, will bring many trial requests at small expense, and once the fan gets into such homes on trial, the results it shows will usually make the sale.

Small offices, such as the doctor's, dentist's, lawyer's, architect's and others, can also be solicited by telephone. A cheery reference to the heat and a request to permit a fan to be sent over to demonstrate how much better the work will go with its help, will usually prove productive of many orders.

Large offices where many people are employed should be given attention by personal calls. Here the advantages of fan comfort can be sold on a straight business basis. The manager or owner should be told how fans will pay their cost over and over again every season in more and better work and better satisfied employees.

Stores, motion picture theatres, restaurants, soda fountains, hotels, etc., are all good prospects for quantity sales and should be given personal attention. Here, of course, the salesman should show the proprietors how fan comfort will attract people to their places of business during the hot weather. He should also show how it will make their clerks, waiters and other employees more alert and cheerful, with a result which will react upon the patrons they serve and result in more liberal patronage.

Factories, particularly those where girls are employed, are excellent prospects. During the hot weather, heat prostrations are common among girl factory workers, resulting in reduced production, expensive medical attention and dissatisfaction among the employees. When the employer realizes that the installation of electric fans will eliminate these difficulties, he will recognize the purchase of a fan equipment as a profitable investment.

Hospitals are excellent prospects, as the fan is a real aid to quick convalescence during hot weather. When the hospital board cannot be influenced by direct salesmanship, often they can be sold through indirect methods. For example, a fan sold or loaned to one private patient in the hospital will make such a strong contrast between the room where the fan is used and others not so equipped, that doctors and nurses will be strongly impressed with the value of fans, and their remarks will help put the message across with the management and directors.

Wherever the fan can be shown in operation, it is always in itself the best possible fan salesman. A demonstration is better than the best verbal arguments of the best salesman. During hot weather the store should be equipped with fans in operation, that no person can come into the store for any purpose without getting a demonstration of fan comfort. Price tags, counter signs and folders should be arranged about, so as to invite a direct enquiry from the caller before he leaves the store.

The passers-by on the street can be reached in a similar way by having

a fan in operation just outside the window or door, so that it directs a breeze toward the sidewalk. A sign near the fan, such as, "If you enjoy this breeze, take it with you. Come inside for particulars," or something of this nature, should be used to clinch the sales message of the fan.

If sales policies will permit it, fans should be sent out on trial at every opportunity. However, in doing this it is very important that they be sent at the right time. On a cool day a fan sent out on trial is effort wasted. On a severely hot day, it nearly always means a sale, as mighty few people are willing to give the fan up when they are enjoying its use.

The instalment plan of payment is a big help where it can be used, particularly when the power company is selling the fans and charges for it simply by adding a small amount to the bill for current each month. Paid for by this method, the purchase of a fan seems like a very small item to the average customer.

In every case, whomever the customer may be or whatever the sales plan may be, emphasis should be made upon the fact that a good fan is not a purchase for one season only, but that the fan will last many years—often a lifetime, and figuring the cost of such a fan in terms of cost per year, it represents an investment of but two or three dollars per year, in return for which the owner receives many dollars value per year in comfort, better health, better work, etc.

It is also well to emphasize the low current consumption of the fan by pointing out that it uses no more current than an ordinary Hydro lamp, and that it will not add a noticeable amount to the monthly current bill. Many people imagine, because a fan makes a great stir and commotion in the air, that it must use a lot of current. This impression should, of course, be corrected.

Windsor Demonstration Sale

The unique feature of the Windsor demonstration sale was "Apple Pie Day."

The announcement shown herewith was made in the *Border Cities Star* on Thursday. Walter Hyatt, the Hydro chef, fabricated twenty-six hum-dinger pies for the occasion, and portions were served to over four hundred visitors, who voted the Hydro electrically cooked pie the best ever.

The Windsor and Walkerville Hydro shops announce their intention of doing something bigger and better in this line at the fall fair.

FRIDAY IS
Apple Pie Day
AT THE
HYDRO ELECTRICAL DEMONSTRATION

Real Old-fashioned Deep Apple Pie Baked to a Taste and Served With Tea and Coffee

FREE

Experts Will Demonstrate to You Electrical Cooking, Electrical Washing, Ironing and Cleaning

This is Your Opportunity — Don't Fail to Come to

THE HYDRO SHOP

31 CHATHAM ST. WEST

Demonstration Held Under the Auspices of the Windsor and Walkerville Hydro Shops

Facsimile of Newspaper Ad used very Successfully, Featuring "Apple Pie Day"

Central Station Merchandising in a Medium-Sized Town

By H. F. Shearer

Manager, Smith's Falls Hydro-Electric System

THE problem of how best to educate the average citizen of a moderate-sized town to the advantages of electrical service is a problem that confronts every central station manager.

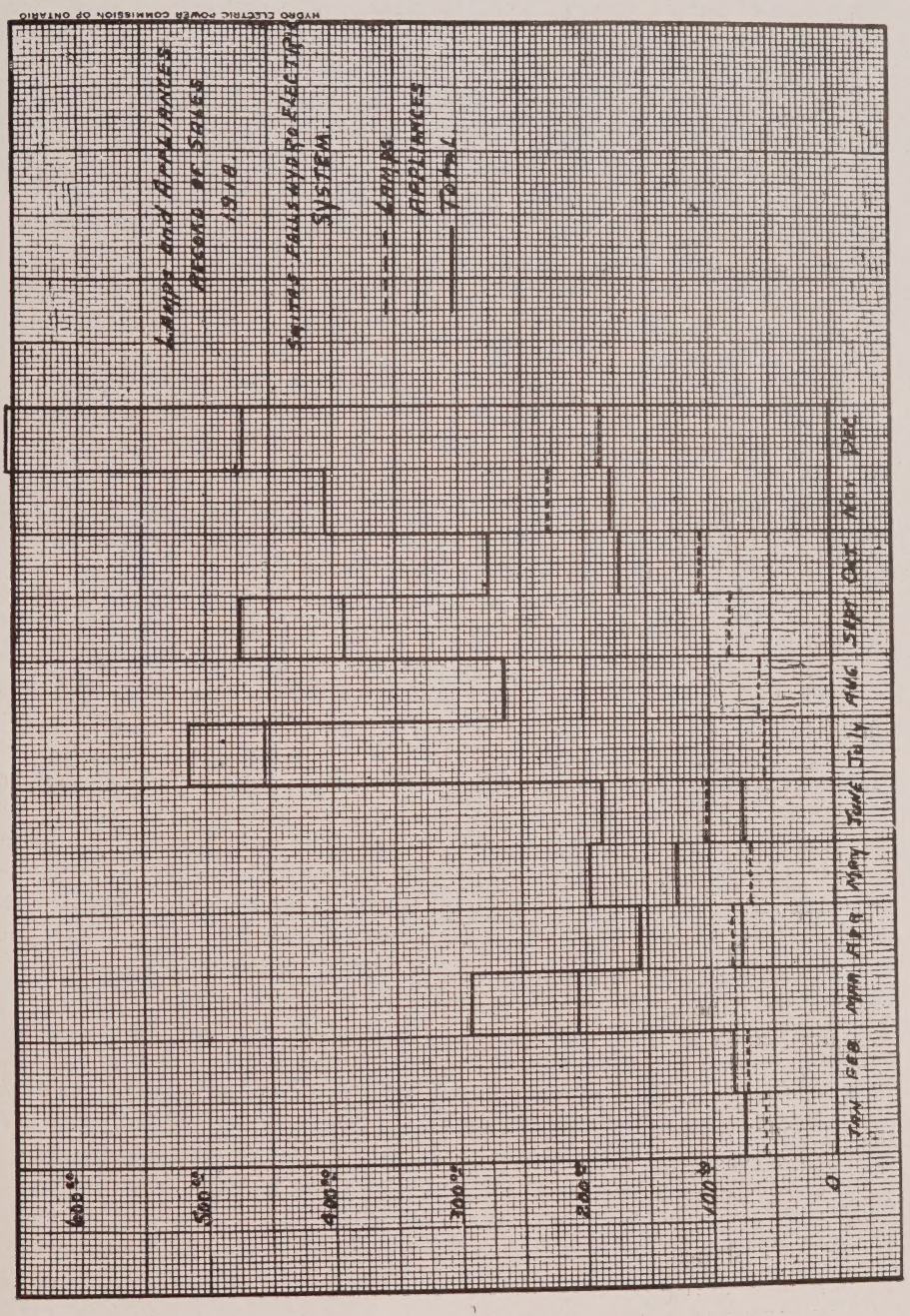
One of the main difficulties seems to lie in the fact that a large number of the domestic consumers are families of retired farmers, who during early and active years of life have not had the conveniences, such as electric light, waterworks, automobiles, etc., that are now to be found in the homes of many of our more prosperous agriculturists.

The old adage, "as a twig is bent," is quite applicable, and the well-to-do farmer who has retired to town, to enjoy a well-earned rest, is, it must be admitted, one who demands from the central station manager a good deal of study if he would persuade the retired gentleman to take advantage of the conveniences which the central station has to offer and by which the manager is seeking to build up a profitable load.

While every town with a population of from three to eight thousand has its own peculiar problems from the central station manager's viewpoint, I believe the situation as indicated above is common to the large majority of such towns in Ontario, and, therefore, a study of the local problems in Smith's Falls and suggestions as to methods applied to solve them may be of some value to other municipal managers.

The one important point that the aggressive central station manager must not lose sight of if he would increase his domestic load is that embodied in the phrase, as good as the neighbors. To explain, if there is one citizen in a block who is amenable to argument and salesmanship, that family must be considered the "key man" for that block, and the central station manager, once having succeeded in securing the installation of electrical equipment in that residence, will find two forces beginning to work in his favor, viz., free advertising on the part of the satisfied user and a certain unexpressed envy on the part of neighbors and nearby residents of the vicinity. These latter now become the legitimate field of operations, and the wise manager will not lose any time in following up the advantage which he has obtained.

Recognizing these facts, we have gone carefully over our meter register and selected the best prospects, and then from this list we have endeavored to obtain at least one name from every block, this special "A" list to be thoroughly canvassed by a competent general appliance salesman, who secures a list of appliances, if any, already in use, as well as a list of any other appliances the con-


HYDRO ELECTRIC POWER COMMISSION OF ONTARIO
Lamps and Appliances Record of Sales 1918
Services from Hydro Electric System.
Lamps
Appliances
Total
500 HP
400 HP
300 HP
200 HP
100 HP
0
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

sumer may be interested in. This information is filed, and becomes the basis on which our "personal plan of sales" is arranged.

If the consumer is thinking of a range, it is so recorded, and any information as to cost of operation, cost of installation, improvements in construction or design, etc., that can be obtained in connection with electric ranges is mailed to the consumer. Water heaters, washing machines, vacuum cleaners, air heaters and the smaller appliances are handled in a similar manner.

Once the sale is made and the installation completed, we spare no effort to make the equipment absolutely satisfactory, and for that small service generally secure the privilege of bringing further prospective purchasers to inspect the completed installation and invariably have the assistance of the testimony of the satisfied user.

Our efforts during 1918 were confined to lamps and the smaller appliances, on account of the necessity of reconstruction of our overhead distribution in order to satisfactorily supply range service.

The accompanying chart indicates the rate of increase in our appliance business. On March 10, 11 and 12th last a demonstration was held in our sales rooms (the offices of the Commission), for which some four hundred invitations were issued, the names being selected from the general list compiled from our meter register.

Ranges, washing and ironing machines and vacuum cleaners were specially exhibited, electrically-prepared refreshments being served during the afternoons. Enquiries made during the demonstration were recorded and are being followed up on our "personal plan of sales," and already results have justified the demonstration.

Rothchild's Maxims

Attend carefully to details of your business.
Be prompt in all things.
Consider well and then decide positively.
Dare to do right, fear to do wrong.
Endure trials patiently.
Fight life's battles bravely, manfully.
Go not into the society of the vicious.
Hold integrity sacred.
Injure no man's reputation or business.
Join hands only with the virtuous.
Keep your mind from evil thoughts.
Lie not for any consideration.
Make few acquaintances.
Never try to appear what you are not.
Observe good manners.
Pay your debts promptly.
Question not the veracity of a friend.
Respect the counsels of your parents.
Sacrifice money rather than principle.
Touch not intoxicating drinks.
Use your leisure time for improvement.
Venture not upon the threshold of wrong.
Watch carefully over your passions.
Xtend to everyone a kindly salutation.
Yield not to discouragement.

—*United Gas & Electric Engineering* Corporation Bulletin.

Hydro Municipalities

NIAGARA SYSTEM
25 Cycles

	Pop.
Acton	1,570
Ailsa Craig	462
Ancaster	400
Ancaster Township	4,577
Aylmer	2,119
Ayr	780
Baden	710
Barton Township	6,061
Beachville	503
Biddulph Township	1,750
Blenheim	1,257
Bolton	727
Bothwell	695
Brampton	4,023
Brantford	26,601
Brantford Township	7,739
Breslau	500
Brigden	400
Burford	700
Burford Township	3,882
Burgessville	300
Caledonia	1,236
Chatham	13,943
Chippewa	707
Clinton	1,981
Comber	800
Dashwood	350
Delaware	350
Dereham Township	3,176
Dorchester	400
Dorchester S. Ty.	1,457
Drayton	613
Dresden	1,403
Drumbo	400
Dublin	218
Dundas	4,834
Dunnville	3,286
Dutton	840
Elmira	2,065
Elora	1,005
Embro	472
Erin	502
Etobicoke Township	5,822
Exeter	1,504
Fergus	1,679
Flamborolgh E. Tp.	2,229
Forest	1,421
Galt	11,920
Georgetown	1,654
Goderich	4,553
Grantham Township	3,133
Granton	300
Guelph	16,022
Hagersville	1,053
Hamilton	104,491
Harriston	1,563
Hensall	717
Hespeler	2,887
Highgate	427
Ingersoll	5,300
Kitchener	19,380
Lambeth	350
Listowel	2,291
London	57,301
London Township	6,024
Louth Township	2,212
Lucan	643
Lynden	662
Markham	909
Merriton	1,670
Milton	1,947
Milverton	929
Mimico	2,004
Mitchell	1,656
Moorefield	335
Mount Brydges	500
New Hamburg	1,398
New Toronto	1,423
Niagara Falls	11,715
Niagara-on-the-Lake	1,318
Norwich	1,093
Norwich N. Township	2,029
Norwich S. Township	1,907
Oil Springs	537
Otterville	500
Palmerston	1,843
Paris	4,437
Petrolia	3,047
Plattsville	550
Point Edward	937
Port Credit	1,179
Port Dalhousie	1,318
Port Stanley	831
Preston	4,949
Princeton	600
Ridgetown	2,080
Rockwood	650
Rodney	626
Sandwich	3,077
Sarnia	12,323
Scarborough Township	5,525
Seaforth	2,075
Simcoe	4,032
Springfield	422
St. Catherines	17,917
St. George	600
St. Jacobs	400
St. Mary's	3,960
St. Thomas	17,216
Stamford Township	3,418
Stratford	17,371
Strathroy	2,816
Streetsville	500
Tavistock	974
Thamesford	504
Thamesville	742
Thorndale	250
Tilbury	1,605
Tillsonburg	3,059
Toronto	460,526
Toronto Township	5,008
Townsend Township	3,268
Vaughan Township	4,059
Walkerville	5,349
Wallaceburg	4,107
Waterdown	696
Waterford	1,027
Waterloo	5,091
Waterloo Township	6,538
Watford	1,115
Welland	7,905
West Lorne	708
Wellesley	583
Weston	2,283
Windsor	26,524
Woodbridge	615
Woodstock	10,004
Wyoming	526
Zurich	450
Total	1,011,978

SEVERN SYSTEM
60 Cycles

Alliston	1,237
Barrie	6,866
Beeton	588
Bradford	946
Coldwater	617
Collingwood	7,010
Cookstown	635
Creemore	599
Elmvale	775
Midland	7,109
Orillia	7,448
Penetang	3,672
Port McNichol	500
Stayner	990
Thornton	250
Tottenham	557
Victoria Harbor	1,542
Waubaushene	600
Total	41,941

WASDELL'S SYSTEM
60 Cycles

Beaverton	821
Brechin	215
Cannington	746
Sunderland	570
Woodville	357
Total	2,709

NIPISSING SYSTEM
60 Cycles

Callander	650
Nipissing	400
North Bay	9,651
Powassan	572
Total	11,273

MUSKOKA SYSTEM
60 Cycles

	Pop.
Gravenhurst	1,600
Huntsville	2,135
Total	3,735

EUGENIA SYSTEM
60 Cycles

Alton	700
Artemesia Township	2,396
Arthur	1,003
Chatsworth	286
Chesley	1,860
Dundalk	750
Durham	1,520
Elmwood	500
Flesherton	428
Grand Valley	586
Hanover	3,310
Holstein	285
Horning's Mills	300
Markdale	904
Mount Forest	1,871
Neustadt	470
Orangeville	2,381
Owen Sound	11,819
Shelburne	1,018
Tara	620
Total	33,057

OTTAWA SYSTEM
60 Cycles

Ottawa	100,561

PORT ARTHUR SYSTEM
60 Cycles

Port Arthur	15,224

CENTRAL ONTARIO SYSTEM
60 Cycles

Belleville	12,080
Bowmanville	3,545
Brighton	1,278
Cobourg	4,457
Colborne	811
Peseronto	2,061
Kingston	22,265
Lindsay	7,752
Madoc	1,114
Millbrook	746
Napanee	2,881
Newburgh	444
Newcastle	600
Omemee	446
Orono	700
Oshawa	8,812
Peterboro	19,816
Port Hope	4,486
Stirling	823
Trenton	5,169
Tweed	1,359
Whitby	2,902
Total	104,538

ST. LAWRENCE SYSTEM
60 Cycles

Brockville	9,473
Chesterville	868
Prescott	2,630
Williamsburg	100
Winchester	1,042
Total	14,113

RIDEAU SYSTEM
60 Cycles

Perth	3,358
Smith's Falls	6,115
Total	9,473

ESSEX COUNTY SYSTEM
60 Cycles

Amherstburg	1,990
Canard River	50
Cottam	100
Essex	1,429
Harrow	375
Kingsville	1,633
Leamington	3,604
Total	9,181

THE aim of the Bulletin is to provide municipalities with a source of information regarding the activities of the Commission; to provide a medium through which matters of common interest may be discussed, and to promote a spirit of co-operation between Hydro Municipalities.